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**THE RESULTS OF THE 1992
"GUIDE TO EATING ONTARIO
SPORT FISH" QUESTIONNAIRE**

NOVEMBER 1993



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THE RESULTS OF THE 1992
"GUIDE TO EATING ONTARIO SPORT FISH"

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SUMMARY

This report deals with the results of a questionnaire distributed with the 1992 "Guide to Eating Ontario Sport Fish", with comparisons to some of the results in the 1989 questionnaire. A total of 494 responses to the 1992 questionnaire were received and used in the analysis found in this report.

Highlights of the results are as follows:

1. Over 86% of the respondents in the 1992 survey had used the Guide in previous years.
2. Over 75% of the respondents indicated that their fishing and/or fish-consuming habits had changed after using the Guide.
3. Over 92% of the respondents found that the information in the Guide met their needs.
4. Over 77% of the respondents check the Guide consumption advice before consuming their catch, and 86% follow the advice if there are consumption restrictions indicated for their catch.
5. Over 64% of the respondents fished at least once every two weeks.
6. The most frequently fished water body by the respondents was Lake Ontario, while Lake Simcoe was the most popular inland lake and the Credit River was the most popular river.
7. The walleye was the most frequently caught and consumed sport fish species, with two-thirds of the respondents

consuming walleye.

8. The average sport fish meal consumed by anglers was 276 grams (9.7 ounces), and the most common consumption frequency was once per month.

9. The average meal size for commercially purchased fish was 237 grams (8.3 ounces), and the most common consumption frequency was once per month. Most commercially purchased fish were saltwater species.

As well as answering the questions, many of the respondents also provided comments on the Guide. The entire set of comments from the 494 respondents to the 1992 questionnaire is contained in Appendix III.

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The authors would like to acknowledge the staff of the LCBO and Beer Stores, MOEE and MNR offices and other Guide distributors for assisting in the questionnaire distribution and the anglers and fish consumers who responded to this survey. We would also like to thank Sandra Prashad for her work in computerizing the results.

The Beer and LCBO Stores provide a valuable service not only because the Guide displays in these stores help to make the public aware of the Guide, but also because these outlets are readily accessible distribution sources to the Ontario public. The assistance of the staff of these stores in the success of the Guide distribution is greatly appreciated.

1.0 INTRODUCTION

The Ontario Government began monitoring contaminant levels in sport fish in the 1960s when concerns were first raised about the effects of substances such as DDT on aquatic life.

In the late 1960s, the Province of Ontario became aware of mercury contamination due to discharges from chlor-alkali (chlorine production) plants. These sources were either eliminated or severely curtailed in the early 1970's, and intensive fish monitoring programs were initiated at the affected sites.

During the 1970s, studies of contaminants in Ontario sport fish were expanded to include such substances as PCBs, mirex, organochlorine pesticides and other organic chemicals.

These efforts led to the formation of the Sport Fish Contaminant Monitoring Program (SFCMP), designed to test fish from as many angling areas as possible and assess all statistically reliable data on contaminants in Ontario sport fish. The program is a coordinated undertaking of the Ontario Ministries of Environment and Energy (MOEE) and Natural Resources (MNR). Advice on human health protection is provided by specialists in Health and Welfare Canada (HWC).

Sport fish are collected by MNR and analyzed by the MOEE laboratories in Toronto and Thunder Bay. The test results are interpreted by SFCMP staff from MOEE, and consumption advice is provided for various size ranges of each species tested. The advice is based on federal HWC contaminant guidelines for

commercially marketed fish. This advice is incorporated into the annually updated "Guide to Eating Ontario Sport Fish", which gives consumption advice on species from over 1600 of Ontario's inland lakes, rivers and Great Lakes locations.

2.0 HISTORY OF THE GUIDE QUESTIONNAIRES

There have been five sets of questionnaires associated with the Guide. In 1978, the first year of the Guide, questionnaires were sent randomly to people who had requested a copy of the Guide from MOEE in response to newspaper advertising¹. A total of 876 replies were received. In 1983, a questionnaire was enclosed in the back of all copies of the Guide, and 807 responses were received. In 1986, an expanded version of the 1983 questionnaire was enclosed in the back of all copies of the Guides and 1337 responses were received. In 1989, questionnaires were enclosed in 100,000 of the 300,000 Guides and 913 responses were received. In 1992, a total of 10,000 questionnaires along with business reply envelopes were sent to distributors, to be inserted randomly into the Guides. Since 494 replies were received from a greatly reduced sample size, this approach was considered to be successful.

The results of the questionnaires are used for several purposes. They provide information on the most effective method of distribution of the Guide, previous Guide use, the use and effectiveness of the consumption advice, fishing frequency, the most frequently fished locations and the fish consumption patterns. As well, readers are given the opportunity to

suggest additional sampling locations, to provide comments and to provide suggestions to improve the Guide. Some of the practical suggestions from these questionnaires have been incorporated into the Guide.

The reports on previous questionnaire results have been published^{2,3,4}. This report focuses on the results of the 1992 survey, with some comparisons to the 1989 results. A copy of the 1992 questionnaire is given in Appendix I.

3.0 QUESTIONNAIRE RESULTS

3.1 Background of the Respondents

A total of 98% of the respondents were Ontario residents, with over 85% of these residents from Southern Ontario (Table 1). This distribution is similar to the previous surveys.

Table 1. Residence of Respondents

<u>Residence</u>	<u>% of Respondents</u>
Southern Ontario	85.5
Northern Ontario	12.5
Another Province	0.4
U.S.A.	1.6

The percentage of males and females responding to these surveys has been consistent throughout, with over 93% of the respondents to the 1992 survey being male (Table 2).

Over half of the respondents to this survey were in the 26-45 age group (Table

Table 2. Gender of Respondents

<u>Gender</u>	<u>Survey Year</u>		
	<u>1986</u>	<u>1989</u>	<u>1992</u>
Male	93.9	93.3	93.1
Female	6.1	6.7	6.9

3). This age group has responded most frequently in all of the surveys done to date.

Table 3. Age Groupings of Respondents

<u>Age Group (years)</u>	<u>% of Respondents</u>
under 15	3.8
15-25	14.0
26-45	54.6
over 45	27.6

3.2 Guide Distribution Sources and Guide Awareness

The Guides are distributed throughout the province mainly through the Brewers' Retail (Beer) and Liquor Control Board of Ontario (LCBO) Stores, MOEE and MNR offices and some fishing licence distributors. Respondents were asked where they obtained their 1992 Guides and the Beer and LCBO Stores were the most frequent selections (Table 4).

Respondents were asked how they first became aware of the Guide. As in the 1989 survey, about two-thirds of the respondents indicated that they first became aware of the Guide when they saw it on display at a distributor (Table 5).

Table 4. Where Respondents Obtained Guide

Source	% of Respondents
The Beer Store	31.8
LCBO Store	24.2
At a gov't. office	17.9
Mailed from gov't office	10.8
From a friend or relative	4.7
Other	10.6

Table 5. How Respondents First Became Aware of the Guide

Source	% of Respondents	
	1989	1992
Saw it on display	68.6	65.9
Told by friend/relative	19.8	15.1
Told by gov't official	2.2	6.5
Newspaper, radio or T.V.	3.9	3.5
Advertisement	2.3	2.9
Other	3.2	6.1

3.3 Use of the Guide

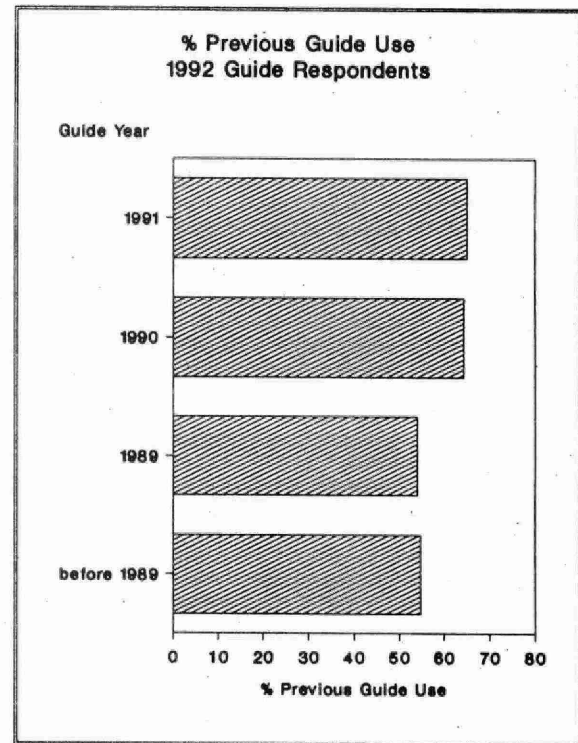
Respondents were asked whether they had obtained and used the Guide in previous years in order to determine Guide usage. In the 1989 survey, 73.3% of the respondents had obtained and used the Guides previously. In the 1992 survey, this figure increased to 86.3% of the respondents. Figure 1 shows the per cent previous Guide use by these respondents.

3.4 Fishing Frequency

Over 64% of the respondents indicated

that they fished at least once every two weeks, with the most frequent response being "more than once a week". This response is similar to past survey results, and confirms the popularity of fishing as a recreational pastime. Table 6 shows the per cent fishing frequencies for each category chosen by the respondents.

Figure 1.



3.5 Fishing Locations

Respondents were given a list of the most popular lakes and rivers from previous surveys, as well as a column in which to write in the most frequently fished location if it was not listed. Table 7 lists the most commonly fished bodies of water for the 1989 and 1992 surveys in four

Table 6. Fishing Frequency by Respondents

<u>Frequency</u>	<u>% of Respondents</u>
daily	3.9
> once/week	24.4
once/week	17.7
once/2 weeks	18.1
once/month	11.9
once/4 months	2.9
once/year	1.0
on vacation only	9.8
never	1.9
other	9.2

categories:

1. the ten most popular angling areas
2. the ten most popular inland lakes
3. the ten most popular rivers
4. the Great Lakes

The most frequently fished water bodies were Great Lakes, with Lake Ontario being the most frequently fished and, as in past surveys, Lake Huron/Georgian Bay was a close second. The relative frequency of angling on the Great Lakes has changed very little from the 1989 survey. The continued popularity of certain locations with anglers is indicated by the fact that eight of the top ten most popular areas are the same in both the 1989 and 1992 surveys (although in slightly different order).

As in all previous surveys, Lake Simcoe is by far the most popular inland lake, and its relative popularity has increased from the 1989 survey. Over 22% of the 1992 survey respondents fished on Lake Simcoe. As in previous surveys, the Kawartha Lakes chain in Southern Ontario is very popular with anglers. Seven of the top ten

inland lakes fished were Kawartha Lakes.

The Credit River was the most frequently fished river, followed closely by the Grand River. For the past three surveys, these two rivers have been the most popular rivers, and their popularity has increased from the 1989 survey. As well, eight of the top ten rivers were the same in both the 1989 and 1992 surveys, with similar frequencies for both surveys. The Nottawasaga River had the biggest increase in popularity. It was not in the top ten in 1989, but was sixth in this survey.

3.6 Sport Fish Caught and Consumed

Respondents were asked which species they caught and consumed. As in all previous surveys, walleye was the most frequently caught and consumed sport fish. Over 66% of the respondents in both the 1989 and 1992 surveys consumed walleye. With the exception of rainbow trout and northern pike being in reverse order from the 1989 survey, the top nine species are the same for both surveys (Table 8). As well, the per cent of respondents consuming these species is similar for both surveys. The largest increase is in the lake trout consumption. The popularity of chinook salmon continues to increase with each survey, probably as a result of increased salmon stocking in the Great Lakes as well as the popularity of Great Lakes salmon derbies.

3.7 Sport Fish Consumption

The questionnaires provide useful information on sport fish consumption

Table 7. The Most Frequently Fished Lakes and Rivers in the 1989 and 1992 Surveys

<u>Lake/River</u>	<u>1989</u>	<u>Lake/River</u>	<u>1992</u>
	<u>% of Respondents</u>		<u>% of Respondents</u>
1. Ten Most Popular Angling Areas			
1. Lake Ontario	30.6	1. Lake Ontario	31.2
2. Lake Huron/ Georgian Bay	30.2	2. Lake Huron/ Georgian Bay	29.7
3. Lake Erie	21.0	3. Lake Simcoe	22.2
4. Lake Simcoe	15.7	4. Lake Erie	22.0
5. Credit River	11.0	5. Credit River	14.4
6. Grand River	10.8	6. Grand River	14.2
7. Trent River	10.2	7. Trent River	11.7
8. Lake Scugog	10.0	8. Lake Scugog	11.7
9. Lake Nipissing	9.0	9. Rice Lake	10.3
10. Saugeen River	7.9	10. Thames River	9.7
2. Inland Lakes			
1. Lake Simcoe	15.7	1. Lake Simcoe	22.2
2. Lake Scugog	10.0	2. Lake Scugog	11.7
3. Lake Nipissing	9.0	3. Rice Lake	10.3
4. Rice Lake	7.6	4. Lake Nipissing	9.2
5. Buckhorn Lake	6.4	5. Pigeon Lake	7.3
6. Pigeon Lake	4.9	6. Lake St. Clair	6.5
7. Lake St. Clair	4.6	7. Balsam Lake	6.5
8. Balsam Lake	4.2	8. Buckhorn Lake	5.9
9. Sturgeon Lake	3.8	9. Sturgeon Lake	5.4
10. Stony Lake	2.9	10. Stony Lake	5.4
3. Great Lakes			
1. Lake Ontario	30.6	1. Lake Ontario	31.2
2. Lake Huron/ Georgian Bay	30.2	2. Lake Huron/ Georgian Bay	29.7
3. Lake Erie	21.0	3. Lake Erie	22.0
4. Lake Superior	4.2	4. Lake Superior	6.5
4. Rivers			
1. Credit River	11.0	1. Credit River	14.4
2. Grand River	10.8	2. Grand River	14.2
3. Trent River	10.2	3. Trent River	11.7
4. Saugeen River	7.9	4. Thames River	9.7
5. Ottawa River	7.9	5. Saugeen River	9.2
6. Thames River	7.5	6. Nottawasaga River	8.8
7. French River	7.1	7. Ganaraska River	8.6
8. Ganaraska River	6.7	8. French River	8.4
9. Niagara River	6.3	9. Niagara River	6.9
10. Rideau River	6.3	10. St. Lawrence River	4.6

Table 8. The Ten Most Frequently Caught and Consumed Sport Fish Species by 1989 and 1992 Respondents

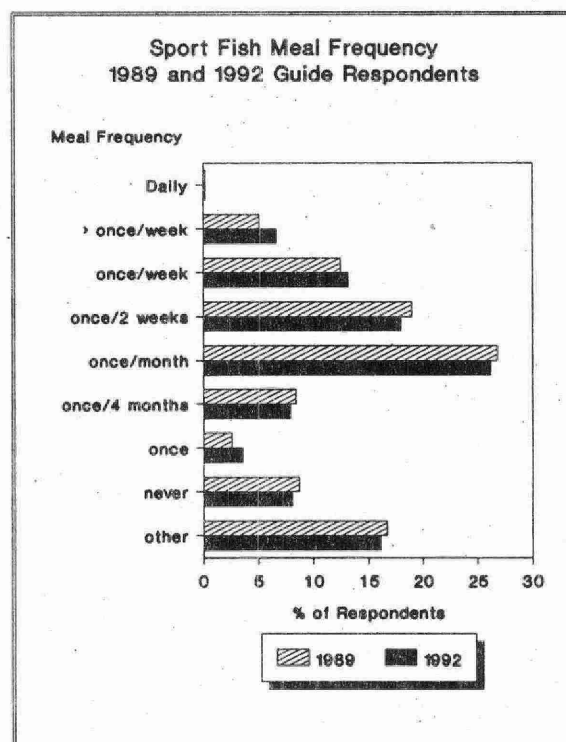
1989		1992	
Species	% of Respondents	Species	% of Respondents
1. Walleye	66.6	1. Walleye	66.9
2. Smallmouth Bass	56.9	2. Smallmouth Bass	58.0
3. Yellow Perch	43.2	3. Yellow Perch	44.4
4. Northern Pike	40.0	4. Rainbow Trout	37.6
5. Largemouth Bass	34.7	5. Largemouth Bass	37.6
6. Rainbow Trout	32.8	6. Northern Pike	36.3
7. Lake Trout	27.9	7. Lake Trout	34.7
8. Brook Trout	21.9	8. Brook Trout	23.7
9. Chinook Salmon	17.5	9. Chinook Salmon	22.2
10. Coho Salmon	15.8	10. Rock Bass	20.2

patterns. Respondents were asked how frequently they ate fish caught by angling from Ontario waters. Figure 2 compares the results of the 1989 and 1992 surveys, and shows that there is little difference in the consumption patterns of the respondents of these surveys. The most common meal frequency in both surveys was once/month, with over 25% of the respondents in both surveys indicating this frequency. As well, 61.7% and 62.3% respectively of the 1989 and 1992 respondents consumed fish at least once a month, and about 8% of the respondents did not consume any sport fish.

The respondents were also asked to estimate the quantity of fish caught by angling from Ontario waters that they would eat at a single meal. The results of the 1989 and 1992 surveys are compared in Figure 3. Most respondents in both surveys (59.2% and 60.6% in 1989 and 1992 respectively) consumed at least 227 gm (8 oz) of sport fish per meal and 227 gm (8 oz) was the most frequently mentioned meal size in both surveys (23.1% and 26.4% for 1989 and 1992

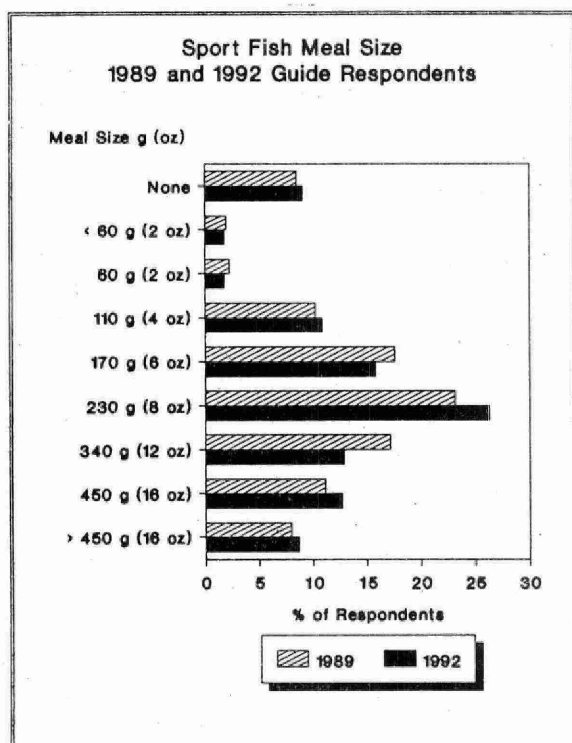
respectively). The average meal size (see Appendix II for calculations in this section) was very similar in 1989 and 1992, being 272 gm (9.6 oz) and 276 gm (9.7 oz) respectively. In the 1992 survey, sport fish

Figure 2.



consumers ate an average of 30 meals per year. Average daily consumption was estimated to be 22.5 gm (0.79 oz) of sport fish, compared to 20.2 gm (0.71 oz) in 1989.

Figure 3.



3.8 Consumption of Other Aquatic Species

A new question was added to the 1992 questionnaire, to assess the level of consumption of the following aquatic species: freshwater clams/mussels, bullfrogs, snapping turtles and crayfish. Prior to the 1992 survey, data on this subject were not available. Table 9 shows the percentage of the 1992 respondents who consumed any of these species at any time in their life. Bullfrogs were the most frequently consumed at 12.8%. Almost 76% of the respondents had never consumed any of these species.

Table 9. Consumption of Other Aquatic Species by 1992 Respondents

Species	% of Respondents
Bullfrogs	12.8
Crayfish	7.5
Snapping turtles	5.3
Freshwater clams/mussels	5.3

The respondents who had indicated that they had consumed one or more of these species were asked how frequently they had consumed these species in 1991. The frequency of consumption of these species was low (table 10). Over 46% of these respondents had not consumed these species in 1991, but had consumed them prior to 1991.

Table 10. Consumption Frequency in 1991 of Other Aquatic Species

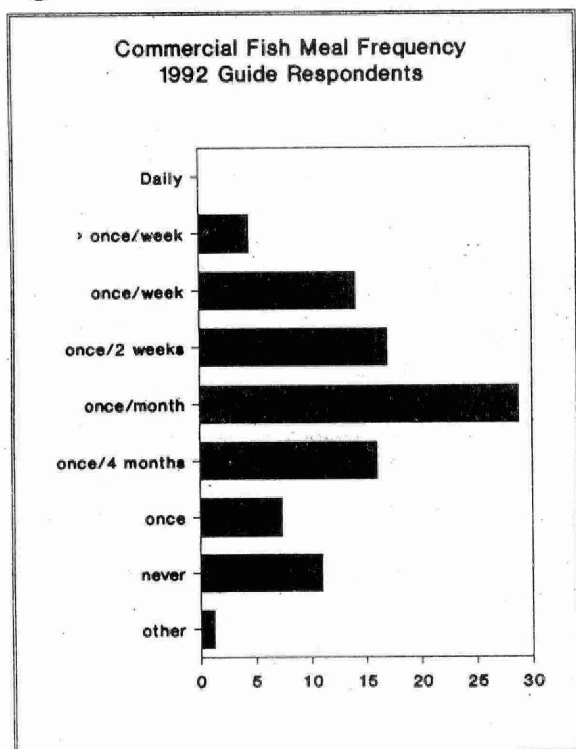
Consumption Frequency	% of Respondents
Once	17.3
2-5 times	30.8
6-10 times	3.8
> 10 times	1.9
Prior to 1991 only	46.2

3.9 Commercial Fish Consumption

In order to determine the total fish consumption from both sport and commercial fish, the question was asked in the 1992 survey: How frequently do you eat fish (freshwater or saltwater) purchased from a store?" Most

respondents (67.1%) indicated that they consumed commercially purchased fish at least once per month (Figure 4) with the average number of meals per year being 26. This compares closely to the level of consumption of sport fish (62.3% at least once per month and an average of 30 meals per year). Similar levels were found in the 1989 survey.

Figure 4.



The mean size of a meal of commercially purchased fish was 237 gm (8.3 oz) compared to 227 gm (8.0 oz) in the 1989 survey. Based on a yearly average of 26 meals of commercially purchased fish per year, daily consumption of commercially purchased fish was estimated to be 16.7 gm (0.59 oz) per day. This is slightly lower than the daily consumption of sport fish which was estimated to be 22.5 gm (0.79 oz). The per cent of respondents who never eat commercial fish was higher

than those who never eat sport fish (10.9% and 7.7% respectively).

Respondents were asked to indicate the commercial fish species which they consumed. The ten most frequently consumed commercial fish species for the 1992 survey are listed in Table 11. The saltwater species were consumed much more frequently than the freshwater species, and in 1992, as in 1989, the top eight commercial fish consumed were saltwater fish.

Table 11. The Ten Most Frequently Consumed Commercial Fish

Species	% of Respondents
1. Halibut	42.7
2. Cod	41.8
3. Salmon	38.2
4. Tuna	36.4
5. Haddock	33.6
6. Boston Bluefish	28.0
7. Sole	26.6
8. Ocean Perch	21.6
9. Rainbow Trout	15.2
10. Smelt	12.5

3.10 Changes in Fishing and Fish-Consuming Habits

In order to determine the effectiveness of the Guide in influencing anglers' fishing habits, the question was asked in all surveys: "Has the information in this Guide led to a change in your fishing and/or fish consuming habits?" Information in the Guide has influenced the majority of respondents as 75.2%

indicated a change in habits after using the Guide. This compares closely to the 1989 survey (77.3%). Over 81% of the respondents who indicated that their habits had changed chose the response "awareness of contaminants in fish" as the reason for the change. This is similar to the 1989 survey, when over 80% of the respondents chose this response. Awareness of contaminants could influence both their choice of fishing locations (ie. they may change to fishing in areas with few or no consumption restrictions) and their fish consumption (ie. they no longer consume all fish caught, but check the Guide before consuming any fish).

Table 12 gives the frequency of responses by those respondents whose fishing and/or fish-consuming habits changed as a result of information in the Guide (these results do not total 100% as more than one answer was sometimes given). Almost 25% of the respondents indicated that the Guide did not change their fishing habits. It was concluded that many of these "no" responses could be justified for reasons such as the areas fished were not in the Guide, in which case no consumption guidelines were available. Table 13 lists the response frequencies in the "no" category and the most frequent response was "don't catch or eat enough fish".

The results of this question indicate that the Guide is very useful in making the public more aware of the presence of contaminants in sport fish.

Table 12. Positive Changes in Fishing and/or Fish Consumption Habits


<u>Change</u>	<u>%</u>
Awareness of contaminants in fish	81.7
Eat fish within guidelines	54.1
Return larger fish	42.4
Changed fishing locations	21.9
Eat less fish	16.9
Eat more fish	5.5
Stopped eating fish	0.8
Other	3.0

Table 13. No Changes in Fishing and/or Fish Consumption Habits

<u>Reason</u>	<u>%</u>
Don't catch or eat enough fish	39.1
Fish caught are in unlimited consumption category	33.6
Areas fished are not listed in Guide	15.5
Don't eat fish	4.5
Other	16.4

3.11 Use of the Consumption Advice

In order to determine if Guide users were following the advisories included in it, three questions were asked:

- "When you catch a fish you wish to keep, do you check the Guide for consumption advice?"
- "If the consumption advice for your catch is not in the  category, do you follow this advice?" and
- "The consumption advice is based on a skinless, lean dorsal fillet. Is this the only portion of your catch which you consume?"

For question a), 77% of the respondents indicated that they do check their catch prior to consumption. Some of the remaining respondents fish at locations where there are no consumption restrictions on the species they are fishing for (eg. Lake Huron chinook salmon). Therefore, there is no need to check the Guide each time they catch a fish. Where there are some consumption restrictions (ie. question b)), 86% of the respondents follow the guidelines. These results are similar to the 1989 survey results of 76% and 85% respectively for questions a) and b).

Question c) was asked for the first time in the 1992 survey to determine what portions of the fish are being consumed. 62% of the respondents indicated that they only consumed skinless, lean dorsal fillets as recommended in the Guide. Respondents were asked to choose between four portion choices if they didn't consume just the dorsal fillet. Table 14 shows the portion types consumed by the anglers (the results do not total 100% as more than one portion could be chosen). The most frequently consumed portion, other than the dorsal fillet, was the "whole fish/fish steaks with fat trimmed". The portions which would be of most concern because of the higher contaminant contents would be the "fish eggs/livers" and "whole fish/fish steaks, including fat", but these were the least frequent responses.

The results of these questions and the "habits" question indicate that the information in the Guide influences the consumption pattern of Ontario anglers.

Table 14. Consumption of Portion Types by 1992 Respondents

Portion Type	% of Respondents
skinless dorsal fillet	62.5
whole fish/fish steaks, with fat trimmed	18.0
skin-on fillet	16.3
whole fish/fish steaks, including fat	10.0
fish eggs/livers	2.6

3.12 Suitability of the Guide

It can be concluded that the Guide is a practical information source for anglers and sport fish consumers since 92.1% of the respondents replied "yes" to the question: "Did the information provided in this Guide meet your needs?" This result is even higher than the 1989 response rate of 87.2%.

Respondents were also asked if the Guide listed the lakes and rivers they were interested in, and four options were given - all, most, some and none - in order to provide a simplified response. The results were positive as 29.9% of the respondents replied "all", 49.0% replied "most", 18.7% replied "some" and only 2.4% replied "none". These response rates are similar to those in 1989. There are over 250,000 lakes and rivers in Ontario and it would be impractical to sample them all. However, the value of the Guide to the majority of its users is indicated by the fact that the most popular fishing locations have been sampled.

3.13 Comments

Guide questionnaires provide the respondents with the opportunity to suggest additional lakes and rivers for sampling, to suggest improvements to the Guide and to provide comments on any aspect of the Program. Respondents were given the opportunity to make suggestions or provide comments in three of the questions in the 1992 questionnaire.

Respondents were asked to suggest additional lakes and rivers that they would like to see tested. The most frequently suggested locations will be sampled in future years.

A large number of suggestions were received in response to the question: "In your opinion, in what way(s) could this Guide be improved?" The most frequent suggestion was for both more water bodies and more species/location to be tested. Other common suggestions included coloured pictures of fish, more location maps and testing for more contaminants. Each of these suggestions is discussed in the following paragraphs:

An explanation of the reasons for selecting a particular location for sampling is given in the introductory text of the Guide. These reasons may include:

- it is a popular angling area
- there is a known or suspected source of pollution nearby
- it is a major source of food for local inhabitants
- it is being opened for recreational development
- it is part of a long-term monitoring study of contaminants in fish

The selection of testing sites is an ongoing process and public input is received from sources such as questionnaire responses.

It is neither economically feasible nor necessary to test all fish species in a particular waterbody. An explanation of the species selected for testing is given in the introductory Guide text. It is important to note that not all species accumulate a particular contaminant at the same rate. For example, top predators such as walleye and northern pike accumulate mercury to a much higher level than do whitefish, which feed lower down on the food chain. If low levels of mercury are found in the top predators, then testing of other species is usually not necessary.

Coloured pictures of Ontario sport fish in the form of a poster can be obtained through the Ministry of Natural Resources. Primarily for cost reasons, the decision has been made to retain the black and white illustrations.

Page size limitations preclude the inclusion of maps of maps of a reasonable scale. However, readers can make use of the Ontario road map or, for more detail, Canadian Government topographical maps. By referring to the latitude and longitude references given in the Guide for each site and those included in the margins of these maps, most sites can be located.

The specific contaminants tested in fish vary from site to site. It is the intent of the program to test fish from a waterbody for all contaminants likely to occur at a site and which could accumulate in fish to

levels harmful to human health. Consequently, at a number of Great Lakes locations, fish have been tested for over 70 contaminants, whereas, at other locations such as isolated inland lakes, testing is carried out for mercury only.

The final statement in the 1992 questionnaire was: "Other comments you may have on this program and publication". A large number of comments were received in response to this statement and the vast majority were very favourable toward the Guide and the Program. Two examples of the comments received were: "This publication has greatly informed me about the various fish contaminants, it is well done and presented nicely. Keep up the good work" and "This is an excellent program and publication, one for which MOE and MNR deserve enormous credit. Thank you." These comments serve to further reaffirm that the Guides serve a very worthwhile purpose as a source of useful information to the angling and fish-consuming public. The wide array of comments received are included verbatim (with no spelling or grammatical corrections) in Appendix III.

means of achieving proper public feedback about the Guide and the Program.

4.0 CONCLUSION

The responses to this and previous Guide questionnaires, along with the highly favourable comments, indicate that the Guide to Eating Ontario Sport Fish is widely used and appreciated by many Ontario anglers and sport fish consumers. There is a definite need to continue serving the Ontario public in the future with this useful information, and to continue with the questionnaires as a

5.0 REFERENCES

1. Thurston, Lynn M. 1979. An Evaluation of the Ontario Fish Contaminant Information Program. Department of Geography, Faculty of Environmental Studies, University of Waterloo.
2. Cox, C.M., A. Vaillancourt, C. de Barros, and A.F. Johnson. 1985. Guide to Eating Ontario Sport Fish Questionnaire Results. Ontario Ministry of Environment and Energy. Toronto.
3. Cox, C.M., A. Vaillancourt and A.F. Johnson. 1987. A Comparison of the Results from the "Guide to Eating Ontario Sport Fish" Questionnaires. Ontario Ministry of Environment and Energy. Toronto.
4. Cox, C.M., A. Vaillancourt and A.F. Johnson. 1990. The Results of the 1989 "Guide to Eating Ontario Sport Fish" Questionnaire. Ontario Ministry of Environment and Energy. Toronto.
5. Ontario Ministry of Environment and Energy. 1992. Guide to Eating Ontario Sport Fish. Toronto.

APPENDICES

I 1992 Questionnaire

II Calculations Used for Sport Fish Consumption Figures

III 1992 Questionnaire Comments from Respondents

"GUIDE TO EATING ONTARIO SPORT FISH" 1992 QUESTIONNAIRE

The Ministry of the Environment sport fish contaminant monitoring program would appreciate your co-operation in completing and returning this postage-free questionnaire. Your answers and comments will enable us to improve the guide and the effectiveness of the program.

1. What is your age? ☐ Under 15 years ☐ 26-45 years
 ☐ 15-25 years ☐ Over 45 years
2. What is your sex? ☐ Male ☐ Female
3. Do you reside in: ☐ Southern Ontario ☐ Another Province
 ☐ Northern Ontario ☐ The U.S.A.
4. Where did you obtain your 1992 guide?
 ☐ The Beer Store ☐ By mail from a Govt. Office
 ☐ L.C.B.O. Store ☐ At a Govt. Office
 ☐ From a Friend or Relative ☐ Other: _____
5. How did you first become aware of the guide?
 ☐ Saw it on display ☐ Newspaper, Radio or TV Story
 ☐ Advertisement ☐ Told by Friend or Relative
 ☐ Told by Govt. Official ☐ Other: _____
6. Have you obtained and used the guide in previous years?
 ☐ No ☐ Yes
 If yes, in which year(s)?
 ☐ 1991 ☐ 1990 ☐ 1989 ☐ Before 1989
7. How often did you go fishing in Ontario throughout 1991?
 ☐ Only during a vacation: _____ times
 ☐ Daily ☐ Once every 4 months
 ☐ More than once a week ☐ Once only
 ☐ Once a week ☐ Never
 ☐ Once every 2 weeks ☐ _____ times
 ☐ Once a month ☐ Other: _____
8. What lakes and rivers in Ontario did you fish in 1991?
 a) Lakes: ☐ Balsam ☐ Nipissing ☐ Scugog
 ☐ Buckhorn ☐ Ontario ☐ Simcoe
 ☐ Erie ☐ Pigeon ☐ Stony
 ☐ Huron/ ☐ Rice ☐ Sturgeon
 Georgian Bay ☐ St.Clair ☐ Superior
 ☐ Other: (your most frequently fished lake, if none of the above) _____
 b) Rivers: ☐ Credit ☐ Niagara ☐ St. Lawrence
 ☐ French ☐ Nottawasaga ☐ Saugeen
 ☐ Ganaraska ☐ Ottawa ☐ Thames
 ☐ Grand ☐ Rideau ☐ Trent
 ☐ Other: (your most frequently fished river, if none of the above) _____

9. What species of fish did you keep to eat in 1991?

- | | | |
|---|--|---|
| <input type="checkbox"/> Brook Trout | <input type="checkbox"/> Crappie | <input type="checkbox"/> Smallmouth Bass |
| <input type="checkbox"/> Brown Bullhead | <input type="checkbox"/> Lake Trout | <input type="checkbox"/> Smelt |
| <input type="checkbox"/> Brown Trout | <input type="checkbox"/> Largemouth Bass | <input type="checkbox"/> Splake |
| <input type="checkbox"/> Carp | <input type="checkbox"/> Muskie | <input type="checkbox"/> Sunfish |
| <input type="checkbox"/> Catfish | <input type="checkbox"/> Northern Pike | <input type="checkbox"/> Walleye (Pickerel) |
| <input type="checkbox"/> Chinook Salmon | <input type="checkbox"/> Pink Salmon | <input type="checkbox"/> Whitefish |
| <input type="checkbox"/> Cisco (Herring) | <input type="checkbox"/> Rainbow Trout | <input type="checkbox"/> White Sucker |
| <input type="checkbox"/> Coho Salmon | <input type="checkbox"/> Rock Bass | <input type="checkbox"/> Yellow Perch |
| <input type="checkbox"/> Others: _____ | | |
| <input type="checkbox"/> did not keep fish to eat | | |


10. How often did you eat these fish caught in 1991?

- | | |
|--|--|
| <input type="checkbox"/> Only during a vacation: _____ times | |
| <input type="checkbox"/> Daily | <input type="checkbox"/> Once every 4 months |
| <input type="checkbox"/> More than once a week | <input type="checkbox"/> Once only |
| <input type="checkbox"/> Once a week | <input type="checkbox"/> Never |
| <input type="checkbox"/> Once every 2 weeks | <input type="checkbox"/> _____ times |
| <input type="checkbox"/> Once a month | <input type="checkbox"/> Other: _____ |

11. How much fish caught by angling from Ontario waters do you eat at a single meal?

- | | | |
|---|--------------------------------------|---|
| <input type="checkbox"/> None | <input type="checkbox"/> 4 oz.(110g) | <input type="checkbox"/> 12 oz.(340g) |
| <input type="checkbox"/> Under 2 oz.(60g) | <input type="checkbox"/> 6 oz.(170g) | <input type="checkbox"/> 1 lb.(450g) |
| <input type="checkbox"/> 2 oz.(60g) | <input type="checkbox"/> 8 oz.(230g) | <input type="checkbox"/> Over 1 lb.(450g) |

12. a) When you catch a fish that you wish to keep, do you check this guide for consumption advice? ☐ Yes ☐ No

b) If the consumption advice for your catch is not in the  category, do you follow this advice? ☐ Yes ☐ No

c) The guide consumption advice is based on a skinless, lean dorsal fillet. Is this the only portion of your catch which you consume? ☐ Yes ☐ No

If No, which portion(s) do you consume?

- | | |
|--|---|
| <input type="checkbox"/> skin-on fillet | <input type="checkbox"/> fish eggs/livers |
| <input type="checkbox"/> whole fish/fish steaks, including fat | <input type="checkbox"/> whole fish/fish steaks, with fat trimmed |

13. a) Please indicate if you have ever consumed any of the following from Ontario waterbodies.

- | | | | |
|---|------------------------------------|---|-----------------------------------|
| <input type="checkbox"/> Freshwater clams/mussels | <input type="checkbox"/> Bullfrogs | <input type="checkbox"/> Snapping Turtles | <input type="checkbox"/> Crayfish |
| <input type="checkbox"/> No, I have never consumed any of these | | | |

b) How frequently did you consume these in 1991? _____ times

14. a) How often do you eat fish (freshwater or saltwater) purchased from a store?

- | | |
|--|--|
| <input type="checkbox"/> Never | <input type="checkbox"/> Once a month |
| <input type="checkbox"/> Daily | <input type="checkbox"/> Once every 4 months |
| <input type="checkbox"/> More than once a week | <input type="checkbox"/> Once a year |
| <input type="checkbox"/> Once a week | <input type="checkbox"/> Once only |
| <input type="checkbox"/> Once every 2 weeks | <input type="checkbox"/> Other: _____ times |

b) If you purchase fish from a store, please indicate which fish you would normally purchase to consume.

- | | | |
|--|--|---------------------------------------|
| <input type="checkbox"/> Boston Bluefish | <input type="checkbox"/> Ocean Perch | <input type="checkbox"/> Tuna |
| <input type="checkbox"/> Cod | <input type="checkbox"/> Rainbow Trout | <input type="checkbox"/> Turbot |
| <input type="checkbox"/> Haddock | <input type="checkbox"/> Salmon | <input type="checkbox"/> Walleye |
| <input type="checkbox"/> Halibut | <input type="checkbox"/> Smelt | <input type="checkbox"/> Whitefish |
| <input type="checkbox"/> Lake Trout | <input type="checkbox"/> Sole | <input type="checkbox"/> Yellow Perch |
| <input type="checkbox"/> Other: _____ | | |

15. How much fish purchased from a store do you eat at a single meal?

- | | | |
|---|--------------------------------------|---|
| <input type="checkbox"/> None | <input type="checkbox"/> 4 oz.(110g) | <input type="checkbox"/> 12 oz.(340g) |
| <input type="checkbox"/> Under 2 oz.(60g) | <input type="checkbox"/> 6 oz.(170g) | <input type="checkbox"/> 1 lb.(450g) |
| <input type="checkbox"/> 2 oz.(60g) | <input type="checkbox"/> 8 oz.(230g) | <input type="checkbox"/> Over 1 lb.(450g) |

16. a) Did the information provided in this guide meet your needs?

- ☐ Yes ☐ No

b) Did it list the lakes and rivers you were interested in?

- ☐ All ☐ Most ☐ Some ☐ None

c) Could you suggest additional lakes and rivers to be tested?

17. Has the information in this guide led to a change in your fishing and/or fish-consuming habits? ☐ Yes ☐ No

If Yes, in what way(s)?

- | | |
|--|--|
| <input type="checkbox"/> Awareness of contaminants in fish | |
| <input type="checkbox"/> Eat more fish | <input type="checkbox"/> Return larger fish |
| <input type="checkbox"/> Eat less fish | <input type="checkbox"/> Stopped eating fish |
| <input type="checkbox"/> Eat fish within guidelines | <input type="checkbox"/> Changed fishing locations |
| <input type="checkbox"/> Other: _____ | |

If No, why not?

- | | |
|--|---|
| <input type="checkbox"/> Don't eat fish | <input type="checkbox"/> Don't catch or eat enough fish |
| <input type="checkbox"/> Fish caught are in the unlimited consumption category | |
| <input type="checkbox"/> Areas fished are not listed in guide | |
| <input type="checkbox"/> Other: _____ | |

18. In your opinion, in what way(s) could this guide be improved?

19. Other comments you may have on this program and publication.

Thank you for taking the time to assist us.

Appendix II

Calculations used for Sport Fish Consumption Figures

The following methods were used to calculate the sport fish consumption figures used in this report. As well, these methods were applied to determine the commercial fish consumption figures.

a) Mean Meal Size

The mean meal size was calculated from responses to question 11 in the questionnaire, which asked "How much fish caught by angling from Ontario waters do you eat at a single meal?" The calculations were done initially in ounces, and for the "less than 60g (2 oz)" response, a value of one ounce was assumed. As well, for the "more than 450g (1 lb)" response, 20 ounces was assumed. The number of responses for each size category was determined and the results were totalled. The number of respondents who did not consume any sport fish were deleted from the calculations. The total was divided by the number of fish-consuming respondents to derive an average meal size of 9.7 ounces or 276 grams.

b) Number of Sport Fish Meals Consumed/Year

The number of sport fish meals consumed/year was determined from the responses to question 10, which asked "How often did you eat these fish in 1991?" All the responses were converted to a number of days out of the year (eg. "daily" = 365, once/week = 52 etc.). For the "greater than once/week" response, three times/week (156) was assumed, and numbers were used, as given, in the "on vacation only", "___ times" and "other" categories. The number of responses for each category, multiplied by the equivalent number of days, was totalled and divided by the number of respondents who consumed sport fish. This gave an average figure of 29.8 or approximately 30 meals/consumer/year.

c) Daily Sport Fish Consumption Figure

This figure is derived from the following calculations:

number of meals/consumer/year (29.8) X mean meal size (9.72 oz) = number of ounces consumed/year (289.7)

This result was converted to grams/year (multiplying by the conversion factor of 28.35), and was divided by 365 days to give a daily sport fish consumption figure of 22.5 gm.

Appendix III

1992 Questionnaire Comments from Respondents

The following are verbatim comments received in reply to the statement: "Other comments you may have on this program and publication." Please note that these comments were not corrected for grammatical or spelling errors. The questionnaires were numbered as they were received, and not all respondents provided comments.

1. Keep it coming. Please promote catch and release.
2. Very well planned and organized with complete information
helpful knowledgeable staff
don't ever change the format of the guide
3. Thank you for your efforts. We do not get away as we used to for 2-week holidays as when growing up eg. 1936 to 1960's. But we love fishing when we can. (Kids now 21 and 20) - No fishing for 3-4 yrs. The attempts to eliminate acid rain and industrial pollution are too slow. The technology is there but implementation is too slow.
4. So far so good. Let more fishing people to know this publication (Guide to Eating Ontario Sport Fish).
5. Excellent.
6. We should clean up the lakes and rivers so we don't have to worry about what we eat.
7. I think you are doing an excellent job and provide good service.
8. Keep up the good work.
9. We appreciate your efforts in this program; and for keeping us updated.
10. Be more strict on polluters. ie. harsher fines, prison terms.
11. This Guide is very informative and I am very pleased to have it.
12. It is nice to know what types of contaminants I have or might ingest.
13. Although I don't follow this guide, I find it a good indicator of the general condition of our environment.
14. Keep up the good work.
15. Stop the polluters through fines and jail terms.
16. Everyone we talk to goes by this book for safe eating so keep up the good work and spread the word on making lakes and rivers better for fishing.
17. Very good keep it up. Thanks
18. I think the guide is a very special book and it is handy to use to let us know more about the fish we can and can't eat.
19. This guide was very helpful - Thank you. I hope you continue to publish this guide in future years.
20. Excellent Book!
21. Very helpful hints at beginning of book.
22. It is very good - Please keep it up. More stocking programs for lake Ontario Salmon and Bay of Quinte Walleyes.
23. In times of recession a small fee or price for these guides, then only those who use them would purchase them there would be less waste.
24. Encourage catch and release in Guide.

25. Excellent Job!!
Keep up the good work!!
26. It made me aware of contaminants in fish. Yes I want to know where the money from the purchase of a fishing license goes.
27. Very well run program
s/b available at parks and conservation areas
should target parks and conservation areas for testing as well
28. Thank You.
29. Clean up the water so we can take our kids fishing.
30. More publicity - positive - about improvements in the Ontario Fishery. Enough of always negative newspaper articles!
31. This is an excellent program and publication, one for which the MOE and MNR deserve enormous credit. Thank you.
32. As a cottage owner and ratepayer on 3 Mile Lake in Muskoka I would like to see a stocking program in effect.
33. Stop misusing License fees. Fire Bud Wildman. Restore stocking programs. Use license fees for proper use, instead of Gov't pockets. I voted N.D.P. but unless former status quo is returned, I will never do so again.
34. Rat on the Polluters and put an end to the need for this book.
35. I would like to see the Southern Ont map to be changed for better locations.
36. I find trout fishing in Georgian Bay area fish are harder to find. Is this because of no season and overfishing on open waters? What can be done about it?
37. Very well put together!
38. Its fine as it is. Fine keep up the good work.
39. It is a good program.
40. Very worthwhile program.
41. Keep up the good work.
42. Keep up the good work
More % of license funds on stocking/habitat enhancement and law enforcement.
43. May resume consuming game fish if move up into the north end of lake Nipigon - or reside permanently in the bush in the future.
44. It OK.
45. I - Thank you.
46. Damned good idea! Now let's clean up the lakes and cut down on acid rain. Lakes in the Algonquin Park area that I used to fish are dead! I like fish! I'm from Scotland, fish are cheaper than beef.
47. Guide for best size of fish to release for better spawning results.
48. Explain a little more about contaminants and levels of each.
49. Make Guide more available to younger people aged 9 -17 who can not get them in alcoholic beverage stores. Make guide a bit bigger with more information on non-game fish, carp, channel cats, perch, crappie etc. I think that the Guide should be free and you wouldn't have to buy any alcohol to get it.
50. Mark all fish in lakes. Please use all the money to stock the lakes/rivers with fish instead of stuffing the bureaucrats' pockets with money.
51. Very Good!
52. I feel that the guide is informative and more than adequate. I also believe that this guide could be produced far more economically and the money channelled back into

sport fishing and restocking by eliminating the french portion of the guide, as it is a guide for Ontario not for Quebec.

53. It's OK.
54. It appears to be quite sufficient.
55. You are doing a fine job.
56. I think it is a good idea.
57. I sure appreciate the work done for the public.
58. We really appreciate this service. It helps us to know how and what to eat in order to stay healthy.
59. To save the cost of envelopes you could add a sheet of kraft or colored stock on the outside of the booklet - this to accept an address label you could repeat the front cover, except in one color rather than three.
60. Keep up the good work.
61. Include the fishing regulations handbook within the consumers guidebook to possibly decrease publication costs the dollars saved could in turn assist in the cost of testing and/or re-stocking of Ontario waterways.
62. I didn't receive my guide until July, I think it should be available sooner.
63. Make sure these contaminants are properly monitored and published.
64. I appreciate the work done to resume the public's health is not jeopardized.
65. It's good to get this free information. A guide is always good to have for reference.
66. Very informative and useful. Thank!
67. The guide is full of information and its free which makes it all the more enjoyable.
68. Very impressed with this guide, A must for the tackle box.
69. I like the program, because it proves if we all do what we can in our own lakes and rivers to stop pollution, we can eat sport fish again.
70. Include a list of stocked lakes in the area. I would appreciate any information on this. And! If you have any I would appreciate it.
71. Overall I am pleased with the program.
72. Are you sure the fish in the Grand River (Brantford) is all right to eat? Check again!!
73. You should test more often.
74. Guide is great - Let's clean up the polluters - Pulp and paper mills and the cottagers with old septic systems. Awareness is great but as I have mentioned the polluters must be dealt with harsley and now not a few yrs. down the road.
75. It is an excellent way to find out what fish are where and to fish at.
76. Generally very good.
77. Test migrators salmonids when they are in the rivers often spawning has been completed.
78. Make it more accessible and convenient.
79. It should be available at provincial parks. It isn't at Algonquin Park.
80. Keep up the good work.
81. This guide should also be available at all locks, anglers supply stores, marinas, gas stations, hardware stores and outfitting (outdoor clothing) stores.
82. 1. Note sources of contaminants.
2. Place warnings at popular fishing areas (docks) marina's.
83. It is a very interesting and a valuable info. source.
84. Map showing sanctuary areas so people know to avoid them and others can report

- on infractions. 1-800 # to report violators or poachers.
85. This is an excellent program - the best I've seen. Please continue.
 86. I think it's an excellent guide please continue to distribute.
 87. Find it to be easily understandable and to the point.
 88. I have trouble finding a copy each year.
 89. I think the book is fine the way it is right now. I wish Pennsylvania would make one like it.
 90. Each year I would pay a \$100.00 for a fishing licence as long as \$90.00 went towards restocking not refurbishing your ----- offices.
 91. Nepawine lake contains smallmouth bass, splake and suckers.
 92. You do a good job, but why not admit that some contaminants exist naturally over tens of thousands of years ie. mercury. Do your tests illustrate consequences? Are your tests too narrow.
 93. Excellent program.
 94. Very valuable, I enjoy read.
 95. Need not print the whole book every year, just print the changes, to be corrected by the user of the guide.
 96. My wife and kids follow the guidelines by I don't.
 97. A) Keep up with this program and publication in spite of financial constraint. Publish Guide once every 2 years with the following year a supplementary like the licensing guide.
B) More than happy to pay a nominal sum of (say) \$1.00 for the Guide.
C) Meet and publish release date of Guide eg. April 1 or May 1 each year.
 98. It is a very useful tool in my tackle box. Thanks.
 99. Stop stocking Lake Trout in Lake Ontario. Stock Chinook Salmon.
 100. In my opinion I believe more people should read this publication in order to have a better idea of what fish should be consumed instead of taking for granted the fish they consume is alright.
 101. Cleaver Lake - Page 64 - The brook trout are said to be safe for consumption. This lake IS contaminated with old mine tailings from early mining activities in the area. I sampled the fish for this book from this lake last year, and I certainly would not recommend that they be consumed. The fish had a distinct "chemical-like" smell to them, as did the lake itself. Internally the fish did not look healthy. The intestines were full of a silver coloured substance, not the usual brown crap that is found. Apparently, years ago, old mine tailings were allowed to leach into this lake, and other lakes downstream. The results in this book do not make sense to me. More sampling should be done on this lake and other lakes downstream.
 102. Our lake contains - more species than the guide - I have watched over the years - and it only contains Smallmouth Bass - As per page 28 machar township.
 103. Why not test full fillet, especially in salmonids for fat-soluble contaminant concentrations, since the lower portion contain more fat as it is consumed by anglers and their families.
 104. It is a very good program.
 105. Excellent Guide.
 106. None, the guide is good the way it is!
 107. I always filet, skin and remove fat on fish in restricted categories. I only save

- portion of filet above lateral line.
108. I think it's great. Most people don't believe that anyone could eat the fish caught until I show them in the book.
 109. I think this is a great guide.
 110. In my opinion the fishing in Ontario is greatly declining. The closing of hatcheries and the lack of stocking is lamentable. Please consider the restoration of these!
 111. It's too bad the money isn't available to combine this publication with the rules and regulations. This way, when looking up a lake for example, you can find out which fish to eat, and when the season's open!
 112. A very good program.
 113. It is a useful project.
 114. Can this Guide delivered together with fishing liscence?
 115. The size symbale for some fish stop at (14-18)inches. I think it should go to the larges limet if uou have the information.
 116. I find that this guide is put together very well and that I myself could not improve upon it. I hope that the publication will continue and update constantly to help people to relise that larer fish should go back to the water to keep the species going and eat the smaller and safer fish for all people to enjoy them in the future. Thank you.
 117. I live on Kawagama Lake for 6 mos. and I go fishing whenever I fell inclined. I keep just enough for the table and release the rest. I don't think our lake has been stocked with Lake Trout for some time.
 118. If you stopped people and industry from polluting our lakes and streams there wouldn't be a problem - stop treating the symptoms and start treating the disease.
 119. -good program.
 120. The people at the Fish Contaminant phone info service are very helpful.
 121. Very good guide and very easy to obtain. Thanks.
 122. Waste of government money. Return the money to your tax payers!
 123. This book is excellent. Keep up the good work. Very interesting.
 124. Should be more copies published so more people in Ontario can be aware and recieve a copie! Should be more done about Lake Ontario pollution. Would eat more Salmon in Lake Ontario if pollution was down!
 125. Excellent public awareness. Keep up the good work.
 126. Good job!!
 127. Seem to be fine the way it is. Try to cut costs like every other business.
 128. I would like you to check the Mississipie Lake again and St. Laurenc River befor Cornwal. Thanks verry much.
 129. Je crois que le guide est parfait les gens on le renseignement requis sur la consomation et je vous en remerci. Je peche depuis l'age de 7 ans dans le lac St. Francais et j'ai maintenant 59 ans, et pour moi c'est un endroit formidable pour la peche. J'aprecis vos information. Si vous en avez a propos de ce lac veuillez m'en informe.
 130. The Guide has led me to change my fishing locations so that I can consume more fish.
 131. Handy book to have.
 132. Ask Northern people about freshwater fish is all about and you learn somethings. To many Caadian and U.S.A. come North and waste fish in lakes i.e. eating small

- one's, eating only half fish, and beer can in lakes.
133. When travelling up north I use the Guide to indicate types of fish in small lakes around the area.
 134. More accurate information on analysis types of contaminants and quantity ie(ppm) what is safe? Unrestricted consumption should still show what is in the fish no matter how small the fish no matter how small the contaminant.
 135. Print more Guides - This is the first one I was able to get since 1987... and only because I got it at a Ministry office.
 136. Have more Pickerel in Otonabee River.
 137. Attach this survey to guide. This is first I've seen and only by chance at a ministry office in Midhurst Ontario.
 138. Good job/mor awarness to what contaminants are in our fish and waters - what about a guide on wild game.
 139. Sometime I can't find the publication.
 140. I fish the Humber River alot around the (Old Mill) area, but their is not action on it or haw poluted the water is there.
 141. It is a great program keep it up, I'm looking forward to next years issue.
 142. Should send out to Ontario anglers at license issuers. This program should be expanded because it is very important for health and financial reason (sue!).
 143. It's a great I'll book!!!
 144. Excellent program.
 145. Shold be advertised more and easily accessable. Good publication - very helpful.
 146. This publication has greatly informed me about the various fish contaminants, it is well done and presented nicely. Keep the good work up!
 147. Print new guide every four years - just update yearly. Very nice guide but just a waste of money to be reprinted every year.
 148. Would prefer distribution in Chambers of Commerce as well as Beer Stores as I am no drinker and do not wish to go to beer stores.
 148. The fish identification section is very helpful.
 149. Send them to the Beer Store again. Allow fisherman to bring in samples to their local Ministry.
 150. I really enjoy your book.
 151. Include testing of fish from commercial sport (recreation) caught for pleasure fishing. This utilization method is bound to increase and we should know more about condition of stock.
 152. More lake trout walleye in Paudash Lake. Watch for pollution.
 153. Great! Just Great! Keep up the good work.
 154. Excellent source of information. Appreciate it is available at no cost.
 155. "First class publication - very useful"
 156. Have guide available where angling liciences are purchased.
 157. Lower the boom on the poluters.
 158. The dorsel section is chosen for measurement - how about comparing dorsel and lower body - fatty area - as a comparison or average percentage.
 159. Good job well done.
 160. None. Because this program is good for me to read and other things.
 161. Nominal fee to help cover costs and keep our taxes down.
 162. More fish such as bluefill, catfish, and sunfish should be printed to take preasure off

- the larger game fish.
163. Give poluters hevvy fine for poluting lake and rivers.
164. (Tumors on fish) - Are there more tumors on fish from certain areas - if so I think this should be posted in the guidelines.
165. I feel the guide is very important and should always continue. It serves as an indicator of ecological health and brings environmental awareness right home to the dinner table.
166. I highly commend and support this program. I wish I could obtain a publication like this in the U.S.
167. Yes. Keep up the good work.
168. I have fished lake Nipissing for many years and have never encountered bad tasting pickerel.
169. It is OK 4 me
170. No. Just great the way it is. Thanks.
171. I like the book very much and I think it helps keep us up on our needs about looking after the inviroment, espically our fishing.
172. It is great the way it is.
173. Quite adequate.
174. The Guide suites my needs
175. Very little improvement needed. Perhaps larger print. The guide should be given to all anglers when purchasing fishing permits.
176. Few! It is fairly comprehensive!
177. #1
178. It is pretty darn good just as it is
179. Seems to be quite informative as it is
180. Pour moi le guide est bon
181. It is to my satisfaction.
182. I can not see where any improvements need to be made.
183. Very good as is.
184. Your guide is #1
185. No. I don't think it needs to be improved. It has taught me alot.
186. Nothing I can think of. Because it is a good understanding book for me. Thanks for help me catch my fish.
187. Presently sufficient
188. Suits my requirements.
189. The 1992 came out very late in the Victoria County area.
190. Very good testing Program. I wish my province was more aware of the contamination problems. (Quebec resident)
191. Page 7 - why does the Guide say: "no known health risk" but "caution is advised" WHY? WHAT CAUTION? MORE THAN THE GUIDE'S LIMITS? PLEASE EXPLAIN THIS MORE!!!
- P.S. This is a Great Guide. Keep it going!!
192. It is very usefull. But it does not tell all. If you research an area do it right. Don't do half a job. I know you are under political presure, "but do your job". We pay you.
193. This Guide is good as is.
194. No - there are no improvements to be made.
195. It is pretty good the way it is. Thanks.

196. You should also charge \$1.00 for these copies of the Guides and put that money towards our lakes and rivers cleanup! CLEAN UP THE DON RIVER IN 93!
197. Why are these publications not available at fishing licenses distribution outlets.
198. From working within MNR I notice a neglect towards this program. I have gathered samples from Lks. Scugog, Rice, Pigeon, Sturgeon (and other Kawartha Lks) along with lakes situated within Terrace Bay District (Steele River). Somehow it has always been a low priority within MNR ranks. Public questionnaires is a quality idea however. More public input and awareness towards contaminants. Best of luck.
199. Excellent guide, thank-you.
200. It is very important to follow the rules in the guide. A job well done.
201. It is a good information guide as is if the facts are correct. Book is an excellent guide.
202. Very well done.
203. Keep a good look out for locals in the areas fishing out of season and laughing at the rules!
204.
 - a) Keep up the good work
 - b) Could the Guide be available earlier in the season?
 - c) I enjoy getting it each year.
205. Very happy with testing results. How often is testing done!
206. Noting if an area has improved or degenerated would encourage people to think about how we are affecting our environment.
207. Fishing Guide is an excellent publication that keeps all anglers informed. It's great that it is free. If this is one reason for fishing licence fees - then I know it is well spent.
208. Preserving fishing as a healthy past time guide should incorridge fish eating in unlimited categories. Many people have scared by guide.
209. I find it very informative.
210. I just started using guide 2 years ago but plan on learning from it.
211. It is very well written.
212. Disappointed it came out so late this year. I was looking for it for the longest time before I found it in the LCBO.
213. Personaly I think most fish in Lake Erie are contaminated. In the Guide you show numbers along side safe fish to consume yet there are contamints in these fish. What's happening?
214. Good idea. Free of charge is a good way to get the books to the public.
215. None. It's great.
216. Can't complain, it's free
217. Good information - easily understood
218. I find the Guide great the way it is